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Geotech, Inc.

QAPP 84-16
P-GJPO-123

Monticello Remedial Action Project (MRAP)

Quality Assurance Program Plan

MRAP OU III AR 532 2-17 QA PLAN
MRAP QUALITY ASSURANCE PROGRAM PLAN
12/90

Work performed under
DOE Contract No.
DE-AC07-86ID12584 for the
U.S. Department of Energy

Grand Junction
Projects Office

QAPP 84-16
Revision 4

Copy No._____

QUALITY ASSURANCE PROGRAM PLAN

for the

MONTICELLO REMEDIAL ACTION PROJECT

of the

SURPLUS FACILITIES MANAGEMENT PROGRAM

December 1990

Work Performed Under
DOE Contract DE-AC07-86ID12584

Prepared for
U. S. Department of Energy
Grand Junction Projects Office

Prepared by
Quality Assurance Section
of Geotech
Grand Junction, Colorado

19526

QUALITY ASSURANCE PROGRAM PLAN

for the

MONTICELLO REMEDIAL ACTION PROJECT (MRAP)

This Quality Assurance Program Plan (QAPP) identifies and documents the applicable Quality Assurance (QA) requirements of the Geotech QA Program that apply to the Monticello Mill Tailings Site (Operable Unit I) remedial design and peripheral property (Operable Unit II) remedial action activities. This QAPP is one of several planning documents which provide management controls for the project.

Prepared by:

Farlie Pearl — Dec. 17, 1990
Farlie Pearl, QA Coordinator — Date

Concurrence by:

Irwin Stewart, Acting Manager, SFMP/DD&D Construction Management — Dec 17th 1990 — Date

Brian Mathis, Director, Geotech UT/ID Operations — 12/17/90 — Date

Bennett Young, Environmental, Safety, and Quality Assurance Director, DOE/GJPO — 12/17/90 — Date

Michael K. Tucker, Acting DOE/GJPO SFMP Project Manager — 12/17/90 — Date

Approved by:

Harry Perry, Program Manager, SFMP/DD&D Programs — Dec. 17, 1990 — Date

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1.0 INTRODUCTION

1.1 Purpose

The primary objectives of the Monticello Remedial Action Project are to restore the government-owned millsite to safe levels of radioactivity, to dispose of or contain the tailings and contaminated soil in an environmentally safe manner, and to perform remedial actions on off-site peripheral properties that had been contaminated by radioactive materials from the mill operations. Geotech is responsible for the remedial design and remedial action necessary to reduce the potential hazard to the public due to radioactive materials on these properties.

The "Standards for Remedial Action at Inactive Uranium Processing Sites" identified in 40 CFR 192 and the Hot Spot Criteria established by radiological protection guidelines in the U.S. Department of Energy *Guidelines for Residual Radioactive Materials at Formerly Utilized Sites Remedial Action Program (FUSRAP) and Remote Surplus Facilities Management Program (SFMP) Sites* (Revision 2, March 1987), will be the basis for remedial action.

This Quality Assurance Program Plan (QAPP) identifies the applicable Geotech Quality Assurance (QA) requirements and supplementary Quality Assurance Instructions (QAIs) that are to be implemented by Geotech for the MRAP site characterization, design, remediation and monitoring, maintenance and associated project management and support activities. QA requirements are imposed on subcontractors through appropriate procurement documents.

1.2 Scope

This QAPP is developed to identify quality requirements associated with SFMP Phase II - Operations of Operable Unit I remedial design and Operable Unit II peripheral property remedial action activities. The specific activities involved as listed in section 4.4 of the *SFMP Draft Resource Manual* (April 1989) are summarized as follows:

- Project Support - The administration and management of the decommissioning operations are termed project support. The project management; project reporting; plant configuration management; personnel; communications; accounting; site security; public information; procurement; quality assurance; site engineering; construction management; and environmental and industrial health and safety, and radiological and non-radiological training activities fall within this activity.

- Procedure Preparation - Technical specifications for performing the decommissioning are developed under this activity. Detailed procedures are developed for decontamination work; waste disposal; dismantlement of buildings, systems and equipment; restoration work; health and safety program implementation; change control; records management; and quality assurance.

- Decontamination - Decontamination includes those processes which reduce the radiation level of components, systems, or structures by the removal of loosely adherent contamination. Collection and retention of the decontamination debris are considered a part of decontamination.

1.2 Scope (continued)

- Dismantlement - Dismantlement includes those activities required to disassemble and remove from their installed positions contaminated and non-contaminated components, systems and structures needed to decommission the facility. Contaminated material must be segregated from non-contaminated items. The collection, retention and disposal, or removal off-site of non-contaminated items, and the collection and retention of contaminated items are considered part of dismantlement.

- Waste Disposal - Waste disposal consists of those activities required to place collected waste contaminated items and decontamination debris into suitable containers and document, transport, and bury or otherwise dispose of these containers in accordance with applicable regulations. Disposal of hazardous chemical wastes and mixed wastes are subsets of this activity. Under DOE Order 5820.2A, decommissioning operations must meet the waste generator requirements described in that Order.

- Health Physics - The activities associated with establishing and maintaining a radiation protection program aimed at limiting the radiation dose received by workers and the general public during decommissioning make up this operational activity. Health Physics activities include the establishment and implementation of administrative controls, radiation protection training, site radiation and contamination surveillance, personnel exposure monitoring and control, contamination control, waste management support, environmental surveillance, and record keeping.

- Change Control - As the need for changes to the project baseline arise, the change control process will be implemented. (Geotech's Cost Schedule Control System, validated by the DOE and described in Geotech Manual UNC-107, will be implemented for the project.)

- Restoration - After the decontamination and dismantlement activities, the facility is restored to previously agreed upon conditions.

- Certification and Verification - The verification process is implemented during Phase II. The activities of the DOE-HQ managed independent verification contractor (IVC) must be coordinated with the activities of the project contractor (Geotech) staff.

1.3 Applicability

Elements of the QA Program are applicable to all Geotech activities associated with this project. Work performed by or for Geotech must comply with the provisions of the Geotech QA Program as described in this QAPP. The achievement of quality is the responsibility of both those who manage and those who perform the work. Each person is expected to do the right job right the first time in accordance with procedures or other requirements.

The Geotech QA Program, defined in the *Geotech Quality Assurance Manual*, (Manual 101), was developed in response to DOE Order ID 5700.6C and based on ANSI/ASME NQA-1, Quality Assurance Program Requirements for Nuclear Facilities Additionally, the Geotech QA Program is organized by 18 Criteria that are parallel to the NQA-1 18 Criteria.

1.3 Applicability (continued)

Figure 1.3-1, "NQA-1/QAMS-005 Comparison" identifies how the Geotech QA Manual, as implemented by this QAPP, can be correlated with the Environmental Protection Agency (EPA) guidelines for a Quality Assurance Project Plan (EPA QAPP). As such, this QAPP and associated implementing documents (Figure 1.4-1 "Matrix of Organizations and Documents that Implement the QA Program") brings the MRAP into compliance with QA requirements of the 16 Essential Elements of the EPA *Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans, QAMS-005/80.*

At the direction of the Program Manager, when required by the customer (DOE or EPA), task specific QA Project Plans (QAPjPs) will be developed as lower tier quality assurance planning documents that specify additional quality requirements. The style and format of the QAPjP will be determined by the QA Manager based on the customer requirements.

1.4 Implementing Organizations and Documents

This QAPP is one of several project planning documents and, in addition to specifying quality requirements, it identifies the organizations responsible for project activities and the various plans and procedure manuals through which the Quality Assurance Program is implemented (Figure 1.4-1, "Matrix of Organizations and Documents that Implement the QA Program"). The matrix shows the organization responsible and the criteria implemented by each document. The current revision of each document is to be used.

1.5 Revisions and Issuance

This QAPP will be revised by the QA Coordinator at the direction of the Geotech Surplus Facilities Management Program (SFMP) and Defense Decontamination and Decommissioning (DD&D) Program Manager (hereafter referred to as Program Manager) as required to meet the needs of the project. Revisions will require approvals at the same level as the original document. This QAPP is maintained by the QA Coordinator and issued through Records Management for the Program Manager. The Records Management Subsection will maintain a distribution list for this QAPP (document control number P-GJPO-123). Requests for copies should be sent to the Program Manager, to the QA Coordinator or to Records Management. Records Management will issue copies of the QAPP upon request.

Figure 1.3-1. NQA-1 / QAMS-005 Comparison

NQA-1/QAMS-005 Comparison

EPA / NQA-1	1, 2 Formal	3. Project Description	4. Organization	5. Measurement Objectives	6. Sampling	7. Sample Custody	8. Calibration	9. Analytical Procedures	10. Data Processing	11. Quality Control	12. Audits	13. Preventive Maintenance	14. Data Assessment	15. Corrective Action	16. QA Reports	17. No EPA Requirement
1. Organization			X													
2. Program			X	X											X	
3. Design		X		X												X
4. Procurement																X
5. Procedures & Drawings	X	X			X			X	X				X			
6. Document Control	X	X			X			X	X				X			
7. Purchased Item Control																X
8. Identification					X											
9. Processes			X		X	X		X	X							
10. Inspection										X						
11. Test					X											
12. M&TE							X									
13. Handling Shipping Storage					X											
14. Status Indicators						X										
15. Non-conformance																X
16. Corrective Action														X	X	
17. Records															X	
18. Audits											X				X	
19. Non NQA-1												X				

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Figure 1.4-1. Matrix of Organizations and Documents that Implement the QA Program

Responsible Geotech Organizations and Documents That Implement the Quality Assurance Program	Quality Assurance Criterion																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
SFMP MRAP Applicable QA Criterion	X	X	X	X	X	X	X	X		X	X	X	X		X	X	X	X
Geotech UT/ID Operations																		
SFMP/DD&D Programs																		
- Operations Management Policy Manual (Manual 104)	x	x																
- Cost Schedule Control Systems Manual (Manual 107)	x	x																
- Project Plan (DOE/ID 12584-52)	x	x																
- Project Management Plan (DOE/ID 12584-54)	x	x																
- Remedial Design Work Plan (P-GJPO-122)	x	x																
- DOE/GJPO Environmental Protection Implementation Plan (P-GJPO-103)	x	x															x	
- Community Relations Plan Update	x	x																
- Quality Assurance Program Plan (84-16) (P-GJPO-123)	x	x																
- Health and Safety Plan	x																	
- Records Management Plan (P-GJPO-121)						x											x	
- Productivity/Quality Improvement Manual (Manual 109)	x	x			x													
SFMP and DD&D Construction Management																		
- Operations Management Policy Manual (Manual 104)	x	x																
- Construction Management Procedures			x	x	x	x	x			x					x			
Engineering																		
SFMP Engineering																		
- Engineering Support Procedures Manual			x		x	x				x								
- AutoCAD Standards Manual (Manual 111)					x													
Field Assessments																		
- Land Survey Support Procedures					x	x												
- AutoCAD Standards Manual (Manual 111)					x													
- Field Assessments Procedures Manual	x				x	x		x		x	x	x	x		x			
- Environmental Procedures Catalogue (Manual 116)					x			x			x		x					
Laboratory Services																		
Analytical Laboratory																		
- Administrative Plan and Quality Control Procedures for the Analytical Laboratories					x			x			x	x			x			
- Handbook of Analytical and Sample Preparation Methods					x			x			x	x						
- Gamma-Ray Spectroscopy System Operations Methods Manual					x			x			x	x						
- Handbook of CLP Procedures Manual					x			x			x	x						

Figure 1.4-1. Matrix of Organizations and Documents that Implement the QA Pr

Responsible Geotech Organizations and Documents That Implement the Quality Assurance Program	Quality Assurance Criterion																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
SFMP MRAP Applicable QA Criterion	X	X	X	X	X	X	X	X		X	X	X	X		X	X	X	X
Laboratory Services (continued)																		
Electronics Laboratory																		
- Calibration Control Program for M&TE and Measurement Standards (Manual 113)												x						
- Electronics Laboratory Procedures			x		x	x									x			
Quality Assurance																		
- Quality Assurance Manual (Manual 101)	x		x							x					x	x		x
- Quality Assurance Desk Instructions and Administrative Procedures	x	x			x	x				x					x	x	x	x
Environmental Compliance and Regulatory Affairs																		
- Work Plans and Specifications	x	x			x	x												
- Environmental Sciences Procedures					x													
- Environmental Procedures Catalogue (Manual 116)					x			x			x		x					
Health, Safety, and Security																		
Radiological and Environmental Safety																		
Operational Health and Safety																		
Occupational Medical Program																		
- Environmental, Safety, and Health Policy Manual (Manual 102)	x	x																
- Environmental, Safety, and Health Procedures Manual (Manual 103)	x	x			x	x									x			
- Health and Safety Desktop Procedures					x			x		x	x	x	x					
Procurement and Property Management																		
- Procurement Manual				x	x	x	x											
- Supply, Property, and Transportation Manual				x	x	x	x						x					
- Geotech Guide for Preparing a Purchase Requisition (Form 90)				x	x													
Information Services																		
Computer Support																		
- Data Processing Manual (Manual 105)			x		x						x							
Publication Services																		
- Management Policies Manual, Manual 100 Section 2 Documentation Systems	x				x	x												
Records Management																		
- Management Policies Manual, Manual 100 Section 13 Records Management																	x	
Human Resources																		
Employee Training and Development																		
- Management Policies Manual, Manual 100 Section 3 Human Resources	x				x	x												

1.6 Productivity and Quality Improvement (PQI) Program

All employees are encouraged to participate in the Geotech Productivity/Quality Improvement (PQI) effort as described in the Geotech *Productivity/Quality Improvement Manual* (Manual 109) and directed by Section 13 of the *Monticello Remedial Action Project (MRAP) and Monticello Vicinity Properties (MVP) Project Draft Final Project Plan (DOE/ID/12584-52)*, November 1989 and Section 16 of the *Monticello Remedial Action Project (MRAP) and Monticello Vicintiy Properties (MVP) Project Draft Final Project Management Plan (DOE/ID/12584-54)*, January 1990.

The PQI system is supervised by all managers in the Company according to the policy and procedures in Manual 109. It provides a systematic way of enabling all employees to become involved in improving productivity and quality as part of a national effort, as well as an enhancement to Company success. Where applicable, individuals should identify project specific savings and improvements and report them to the Program Manager.

1.7 Reference Documents

- *Federal Facility Agreement* - Monticello (Utah) Site: Monticello Vicinity Properties NPL Site and Monticello Millsite. Pursuant to Section 120 of the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA) of 1980 as amended by the *Superfund Amendments Reauthorization Act* (SARA) of 1986, between the U.S. Environmental Protection Agency (Region VIII), the State of Utah Department of Health, and the U.S. Department of Energy (DOE), Idaho Falls, Idaho.

- *Monticello Mill Tailing Site, Declaration for the Record of Decision and Record of Decision Summary*, August 1990, (DOE/ID/12584-50).

- *Draft Resource Manual*, Surplus Facilities Management Program, April 1989.

- *Geotech Quality Assurance Manual* (Manual 101)

2.0 PROGRAM QUALITY LEVEL

The Program Manager has determined that the Standard "S" level requirements of the QA Program are applicable, in a graded manner, for the actions necessary to accomplish the MRAP Operable Unit I, millsite, remedial design and Operable Unit II, peripheral properties, remedial action activities.

The QA requirements and QAIs identified in Section 3.0, "Program Quality Assurance Requirements", of this QAPP, were developed from the Standard "S" Requirements of the Geotech QA Program, as detailed in the Criterion sections of the *Geotech Quality Assurance Manual* (Manual 101). The requirements are applied in a graded manner to meet the needs of the project activities. Grading is achieved through the assignment of relevant criterion and QAIs at a "S" standard level.

The QAPP is an integral part of the overall planning documents for the project. At least annually the Program Manager will review the scope of work with the assigned QA Coordinator to re-evaluate the QA Program level ("S" or "Q") and the applicable QA requirements, for revisions, or to determine the continuing need for a QAPP.

3.0 PROGRAM QUALITY ASSURANCE REQUIREMENTS

3.1 CRITERION 1, QUALITY ASSURANCE PROGRAM
(QAIs 1.1, 1.2, 1.3, 1.4, 1.6, 1.7, 1.9, 1.10 and 1.11 apply)

The Quality Assurance Program applies to all activities associated with defining and implementing requirements for quality assurance and verifying compliance with those requirements.

QA Program Implementation

This QAPP describes the Geotech QA Program requirements that are applicable to the MRAP remedial design and peripheral property remedial action activities. The QA effort expended will be graded to meet the needs of the project. To use a graded approach, the relevant Standard Level requirements of each Criterion and associated QAIs are identified. When a Criterion is not applicable a justification is provided for its exclusion. The QAPP will be updated to reflect changes in the scope of work, changes in the base QA Program, or as otherwise directed by the Program Manager.

Each organization performing work for the project must establish adequate instructions implementing the QA requirements that apply to the work. If implementing instructions have been provided by another organization for Company-wide use, and are invoked by the organization, those instructions may suffice. QAI 1.10, "Cognizant Organizations for QA Program Implementation", provides additional information and requirements for QA Program implementation.

A matrix identifying the applicable QA Criterion and showing the responsible organizations along with the procedure manuals and planning documents that are used for conducting the work and implementing the QA Program is provided for reference in Figure 1.4-1, "Matrix of Organizations and Documents that Implement the QA Program".

Planning

Work performed for the project is to be conducted in accordance with the requirements established in the MRAP planning documents and User Organization or Company-wide procedures. The originators of these documents are responsible for working with the Program Manager or his designee to assure the content of the documents are correct and maintained current for project use.

The Program Manager is responsible for assigning responsibility for preparation of planning documents. The planning documents are to identify the purpose of the project, applicable requirements, assignment of responsibility, schedules, methods to accomplish the work and deliverables. Plans will be reviewed by affected organizations.

Organizational responsibilities, interfaces and implementing instructions will be identified during planning and will be maintained throughout the work. QAI 1.11, "Administrative and Technical Planning", provides additional planning requirements and will be used when appropriate for this project.

Planning (continued)

Section 1.4, "Program/Project Documentation", of the *MRAP/MVP Draft Final Project Management Plan (DOE/ID 12584-54)* refers to DOE-Mandated, FFA-Mandated, and associated project Implementing Plans. Section 3.0, "Description of Regulatory Compliance Documentation", of the *Remedial Design Work Plan (P-GJPO-122)* further identifies and defines FFA required Primary and Secondary documents.

Additional planning documents may be prepared as needed to address changes in requirements or scope of work. The Program Manager will notify the QA Manager of substantial changes to the scope of work in accordance with QAI 1.2, "Notification of Incoming Work".

QA Coordinator

A QA Coordinator has been assigned to this project by the QA Manager. This assignment may change from time to time at the discretion of the QA Manager. The QA Coordinator provides a management support function to the Program Manager and all organizations doing work for the project through such activities as document reviews, surveillances to verify compliance with requirements, dispositioning various QA Reports and providing Quality Assurance indoctrination to project personnel.

Reviews

Planning documents, implementing instructions, procurement documents and design documents will be reviewed. Planning documents should, at a minimum, be reviewed for correctness of organizational responsibilities and interfaces, and identification of applicable administrative, technical, and quality requirements. The document originator will provide the document to affected organizations for review. Reviews by compliance organizations such as, Quality Assurance, Health Safety & Security (HS&S), Environmental Compliance & Regulatory Affairs (EC&RA), should be considered.

All organizations assigned responsibilities through project plans, procedures or other instruction must be included in the review process and their comments must be resolved before the document is issued. The record of document reviews will be retained as specified by the organization originating the document.

The "Record of Review" form Figure 3.1-1, or an equivalent (form or memo), must be used for documenting the review and comment resolution. Review documentation will contain the following information, as applicable:

- Document Identification (title, chapter or section, and revision number)
- Author's name, review issue and response due dates
- Reviewer's name(s) or review distribution list
- Scope of the review (Special Instructions, as applicable, the author should direct the review needed to meet specified requirements)
- Body of the review (a marked-up copy of the document may be adequate)
- Reviewer Remarks and Recommendations, if any
- Comment resolution

3.0 PROGRAM QUALITY ASSURANCE REQUIREMENTS

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Planning documents, implementing instructions, procurement documents and design documents will be reviewed. Planning documents should, at a minimum, be reviewed for correctness of organizational responsibilities and interfaces, and identification of applicable administrative, technical, and quality requirements. The document originator will provide the document to affected organizations for review. Reviews by compliance organizations such as, Quality Assurance, Health Safety & Security (HS&S), Environmental Compliance & Regulatory Affairs (EC&RA), should be considered.

All organizations assigned responsibilities through project plans, procedures or other instruction must be included in the review process and their comments must be resolved before the document is issued. The record of document reviews will be retained as specified by the organization originating the document.

The "Record of Review" form Figure 3.1-1, or an equivalent (form or memo), must be used for documenting the review and comment resolution. Review documentation will contain the following information, as applicable:

- Document Identification (title, chapter or section, and revision number)
- Author's name, review issue and response due dates
- Reviewer's name(s) or review distribution list
- Scope of the review (Special Instructions, as applicable, the author should direct the review needed to meet specified requirements)
- Body of the review (a marked-up copy of the document may be adequate)
- Reviewer Remarks and Recommendations, if any
- Comment resolution

Figure 3.1-1. Record of Review Form

RECORD OF REVIEW

To: (List Distribution)

Return To_____ Review Due Date_____

Type of Review: ____ Administrative ____ Technical ____ Other_____

Document Description:

Title:

Author(s):

Special Instructions:

Reviewer Remarks:

Recommendation: ____ Release Without Comment
____ Incorporate Comments and Issue
____ Resolve Comments and Reroute for Review

_____
Reviewer Signature and Date

Author Response:

_____
Author Signature and Date

____ Comments have been resolved.

_____
Reviewer Signature and Date

Reviews (continued)

A Work Readiness Review will be held and documented, when directed by the Program Manager. The review will assure the adequacy of systems and processes prior to the start of work. The review will be conducted in accordance with the *Operations Management Policy Manual* (Manual 104), "Work Readiness Reviews", and the guidance provided in the *Draft SFMP Resource Manual*. QAI 1.11, "Administrative and Technical Planning", provides additional planning requirements and will be used when appropriate for this project.

Management Self-Assessment

The Program Manager will evaluate implementation and effectiveness of the QA Program during the mid-year and year-end reviews as described in QAI 1.3, "Management Self-Assessment".

Suspension of Activities (QA Stop Work Orders)

The QA Section may order a suspension of activities (QA Stop Work Order) when significant or intolerable conditions, internal to Geotech, that jeopardize quality have occurred or appear imminent, and other means of corrective action have failed. The instructions provided in QAI 1.6, "Suspension of Activities", describe the steps for the Quality Assurance Section to use for issuing and lifting a QA Stop Work Order.

Personnel Qualifications

People who perform or manage activities that affect quality must be designated and provided indoctrination and training commensurate with their education, experience and proficiency and with the complexity, scope and nature of the work.

Training needs must be evaluated by supervisors, and training must be provided whenever required to meet initial proficiency, or to adapt to changes in technology, methods, or job responsibilities. Training must be documented.

QAI 1.1, "Training and Indoctrination of Employees", provides additional information for training and indoctrination of personnel and QAI 1.9, "Certification of Personnel", is invoked for the certification of QA Surveillance and Audit personnel.

QAI 1.1 Training and Indoctrination of Employees

This instruction provides additional information about the requirements for employee training and indoctrination for activities affecting quality. QAI 1.1 is applied to all organizations performing work for the project except when the organization has provided implementing instructions that meet the QA requireme

QAI 1.1 Training and Indoctrination of Employees (continued)

Responsibilities

The Project Manager or his designee is responsible for identifying project required training and occupational medical qualifications. The Program Manager, Activity Groups and Compliance Organizations may specify additional training required for changes in work scope, specific tasks or additional project related activities. All affected organizations will be informed of any changes to project required training or other specified personnel qualifications.

The Section Managers are responsible for assuring that personnel have received and satisfactorily completed required training and indoctrination (Company-wide, project-specific or that which is internal to the organization and its procedures) and as appropriate, project required occupational medical screenings and that the qualifications and training have been documented. This may include, but is not limited to the following:

- Indoctrination to project planning documents
- Additional training/indoctrination as required by the plans (for example, a site specific health and safety plan may require all field personnel to have completed and satisfactorily passed a course in Radiation Worker Training)
- Administrative and technical procedures

The employee's immediate supervisor is responsible for verifying completion and current status of required training and medical screenings before assigning the employee to site activities. The employee is responsible for required retraining, indoctrination and medical screenings.

Assessment of Training Needs

Project and Activity Managers will determine annually (or more often) the extent and depth of employee training and indoctrination required for activities affecting quality. The Company-wide employee "Performance Development Review" (PDR) may be used to document the assessment of training needs.

Indoctrination

All organizations are responsible for providing and documenting employee indoctrination. Indoctrinations may be provided by the employee's organization or by other organizations. They may consist of briefings, classes, tours or reading assignments.

Records and Documentation

Indoctrination and training must be documented to show that needs were assessed, required training was provided and personnel were able to demonstrate adequate knowledge or skill. Training documentation will be updated, as appropriate, to reflect additional training due to changes in plans, procedures, methods or job responsibilities. (Training planning sheets, lesson plans, rosters, etc. are available for use to all User Organizations through the Training and Employee Development Subsection of the Human Resources Section.)

Figure 3.1-2. Training Attendance Sheet

Training Attendance Sheet

(Instructions on reverse side)

Course Code _____ Course Title _____

Text/Audio Visual Title _____

Date(s) Presented _____ Duration *(hours)* _____

Instructor's Name and Organization _____

Attendees:

Name (printed)	Signature	Organization/ Company Name	Cost Code/ Project No.	Employee No.	S.S. No.

Instructor's Signature _____ Date _____

QAPO 17.2B
11-90

Training Attendance Sheet Instructions

1. Lesson Number: Record the lesson number as assigned by the Trainer. If this sheet is used to document an organization's internal training, place N/A on this line.

2. Lesson Title: Self-explanatory.

3. Course Text: Use this line to document the internal training topic being covered. (This line is not needed for Company-wide training.)

4. Remainder of the sheet is self-explanatory.

Records and Documentation (continued)

Training will be planned and documented. Training, indoctrination and review sessions may be documented using form UNC-1720 "Training Attendance Sheet" (Figure 3.1-2). Sessions typically include an attendance roster that identifies the trainer, individuals trained (name and employee identification number), dates of the training, a description of the training (e.g. reference to the training text or procedure) and, as appropriate, certificates or other means of noting satisfactory completion.

Objective evidence of proficiency may be documented by noting Pass (P) or Fail (F) by the attendee's name on the "Training Attendance Sheet" (Figure 3.1-2), by the instructor's statement of the individual's proficiency on an exam cover sheet or memo, or by a skill sheet checklist. General orientation, indoctrinations and reviews do not require proficiency documentation.

Personnel training records will be maintained by the Training and Employee Development Subsection of the Human Resources Section and the status of personnel training may be verified through this office. Instructors will forward indoctrination and training documentation to this group for inclusion of the record in the Geotech Personnel Training Records System. Copies of attendance sheets may be retained by the instructor and/or sent to the attendees organization for inclusion in the individual's organizational training file.

QAI 1.2 Notification of Incoming Work

The Program Manager will notify the QA Manager whenever additional work or substantial changes to the existing activities or requirements are received from the sponsor. The QA Manager, QA Coordinator and Program Manager will meet to review the scope of work and determine how the QA Program will be applied.

QAI 1.3 Management Self Assessment (QA Self Assessment)

Semi-annually Vice Presidents direct their managers to perform a self-assessment. QA self-assessment is encouraged as part of this semi-annual Cost Plus Award Fee (CPAF) milestone effort and should be included in the narrative self-appraisal reports. Refer to QAI 1.3 in the *Geotech Quality Assurance Manual* (Manual 101) for some examples of areas that may be considered when performing the self-assessment.

QAI 1.4 Development and Approval of Quality Assurance Program Plans (QAPP's)

The QA Coordinator will prepare and revise the QAPP for the Program Manager. The QAPP will be reviewed for adequacy and completeness by the managers of affected organizations (or their designee), the QA Manager and the Program Manager. QAPP review documentation for the current version of the document will be retained in the QA Section files and will include completed Record of Review forms and a mark-up copy of the draft text with comment incorporations.

QAI 1.4 Development and Approval of Quality Assurance Program Plans (QAPP's) (continued)

The QAPP will be approved by the Geotech SFMP and DD&D Program Manager with concurrence of the UT/ID Operations Director, the SFMP/DD&D Construction Manager and the assigned DOE/GJPO QA and SFMP Managers.

The QAPP for the SFMP/MRAP Project has been assigned 84-16 as an internal QA document number and P-GJPO-123 as a project document number. Revisions to the QAPP are subject to the same process of documented review and approval as the original QAPP.

QAI 1.6 Suspension of Activities (QA Stop Work)

Those responsible for the work have primary responsibility for achieving quality. Correspondingly, those responsible for the work have responsibility and authority for stopping work and taking corrective action as needed to maintain the quality of the work.

QAI 1.6, provides detailed instructions for issuing and lifting QA Stop Work Orders. It is applicable to the QA Section for suspending activities internal to Geotech when significant or intolerable conditions that jeopardize quality have occurred or appear imminent, and other means of obtaining corrective action have failed.

For external activities, such as suppliers or subcontractors, suspension of activities shall be issued through the Procurement organization when other methods have failed to correct deficiencies. Justification must be thoroughly documented for suspension of supplier or subcontractor activities that will identify adverse conditions and effects, dates, persons contacted, requests for corrective action, related correspondence, and any other pertinent information.

QAI 1.7 QA Review of Documents That Implement the QA Program

Organizations that originate project documents are responsible for including appropriate and required QA requirements within those documents. Such documents include plans, procedures, procurement and design documents.

When requested, the QA Coordinator will review project documents for compliance with QA requirements. The review will be documented and any comments that require resolution will be provided to the originating organization.

QAI 1.9 Certification of Personnel

This QAI is applicable to the QA Section for certification of Lead Auditors. The QA Manager is responsible for training audit personnel, assuring assigned audit personnel are independent from responsibilities in the areas they will audit and for developing and administering Lead Auditor examinations.

The QA Section's internal Desk Instructions and Administrative Procedures Manual provides procedures for training and qualifications, certification, and maintenance of qualifications for Lead Auditors.

QAI 1.10 Cognizant Organizations for QA Program Implementation

Responsibilities for Implementing the QA Program

All organizations have responsibilities for implementing the QA Program. Specific assignments will be identified during project planning in accordance with Manual 107, *Cost/Schedule Control System.* General assignments are identified in Section 12 of the *Geotech Management Policies Manual*, (Manual 100).

Responsibilities for QA Program Procedures

Standardization of systems and methods is in the interest of Geotech. To this end, specific support organizations that have expertise in an activity area have been assigned as the Organizations of Primary Responsibility (OPR) for establishing Company-wide procedures and instructions. When no primary organization is identified for developing Company-wide procedures to implement the requirements of a QA Criterion, or when an organization chooses not to use the Company-wide procedures, the instructions, and procedures of that organization performing the work must address all of the applicable QA requirements.

A listing of organizations assigned responsibility and the Manuals containing the procedures is presented in Table 1.10-1, "Organizations of Primary Responsibility for Company-wide Procedures".

QAI 1.11 Administrative and Technical Planning

Planning is performed to assure efficient and effective approaches to the work, to document and identify the methods to be used, to specify the sequence of actions to be taken, to determine whether procedures must be prepared, identify what training may be required, and to establish schedules for the activities.

Project Plans should establish what is to be accomplished, who will accomplish it, when and how it will be accomplished and how one will know when it has been accomplished. As appropriate, project planning should address each of the following general areas: administration, technical, environmental, safety and health, and quality assurance.

Table 1.10-1, Organizations of Primary Responsibility for Company-wide Procedures

Criterion	Organization	Document Containing Implementing Procedures
1	Human Resources	Manual 100, Section 3, "Training and Development" and *Training Procedures Manual*
1	Operations Division	Manual 104, *Operations Management Policy Manual*
2	Program Planning	Manual 107, *Cost Schedule Control System*
3	Information Services	Manual 105, *Data Processing Manual* (limited to computer related activities only)
4 & 7	Procurement	*Procurement Manual* *Supply, Property, and Transportation Manual*
5 & 6	Publication Services	Manual 100, Sections 2, "Documentation Systems"
5	Field Assessments	Manual 116, *Environmental Procedures Catalogue*
12	Electronics Laboratory	Manual 113, *Calibration and Control Program for M&TE and Measurement Standards*
15	Quality Assurance	Manual 101, QAI 15.1, "Nonconformance Report"
16	Quality Assurance	Manual 101, QAI 16.1, "Corrective Action System"
17	Records Management	Manual 100, Section 13, "Records Management"
18	Quality Assurance	Manual 101, QAI 18.1, "Audits"

QAI 1.11 Administrative and Technical Planning (continued)

Plans are to be revised when substantial changes in project scope, organizational responsibilities, requirements or project activities occurs. The Program Manager or his designee will use the Program Directive described in the *Operations Management Policy Manual* (Manual 104) to document and direct changes to project activities or documents. Revisions are subject to the same reviews and approvals as the original document. Minor changes will be documented as determined by the Activity Manager and will identify the plan and section of the plan being changed.

Readiness Reviews

A Work Readiness Review will be held and documented, when directed by the Program Manager. The SFMP MRAP Construction Management Project Manager is responsible for the selection of a review committee composed of representatives from technical, compliance, and support organizations as appropriate to the work.

When substantial changes occur in the scope or tasks associated with the work, a Readiness Review will be conducted to assure that planning is complete (i.e. requirements have been identified and management controls are in place) and that all logistics, equipment, procedures, personnel, required training and other resources are readily available and adequate for the completion of the task.

The review(s) will be documented to identify the participants, content of the review, assignment of responsibilities and schedule for completion of action items. Documentation of the Readiness Review will be included in the MRAP Project File. (Additional details of administrative and/or technical elements to consider when conducting a Readiness Review are identified in QAI 1.11, "Administrative and Technical Planning", of the *Geotech Quality Assurance Manual*, (Manual 101.)

3.2 CRITERION 2, ORGANIZATION
(QAI 2.1 applies)

The organizational structure and assignment of responsibilities will be established based on the following principles:

- Quality performance is achieved, verified and maintained by people who perform the work. (Quality Control elements)
- Quality achievement is independently verified by people or organizations not directly responsible for performing the work. (Quality Assurance elements)

Organizational Responsibilities

Organizations performing work are responsible for developing, issuing and complying with documented instructions and procedures, or by other means consistent with QA requirements. (Refer to Figure 1.4-1, "Matrix of Organizations and Documents that Implement the QA Program.")

Geotech and the SFMP MRAP organizational structure and interfaces are described by the following Figures and Summary of Organizations and Responsibilities:

- Figure 3.2-1, "SFMP Program Organization", identifies the SFMP Program Administration through the DOE Office of Environmental Restoration and Waste Management (EM).
- Figure 3.2-2, "DOE Idaho Operations and Grand Junction Projects Office Organization", identifies the Programmatic control as managed by the DOE Idaho Operations Office (DOE/ID)
- Figure 3.2-3, "Geotech Organization", identifies the organization of the Technical Assistance and Remedial Action Contractor.
- Figure 3.2-4, "Geotech Matrixed SFMP MRAP Operations Organization", describes the interfaces and the relationships between organizations supporting the project within Geotech.

Management Requirements

Geotech Management is responsible for implementing the QA Program. The Program Manager or his designee is responsible for assuring the QA Program is adequately defined through this QAPP for project implementation.

Personnel or organizations assigned to verify the achievement of quality or other programmatic compliance requirements shall do so through performance of planned and documented appraisals, assessments, audits, surveillances and inspections. These personnel shall have sufficient authority, access to work areas, and organizational freedom to identify problems; initiate, recommend, or provide solutions through designated channels; ensure that items or activities are controlled until the unsatisfactory condition is resolved; to verify implementation of the solutions.

Figure 3.2-1. SFMP Program Organization

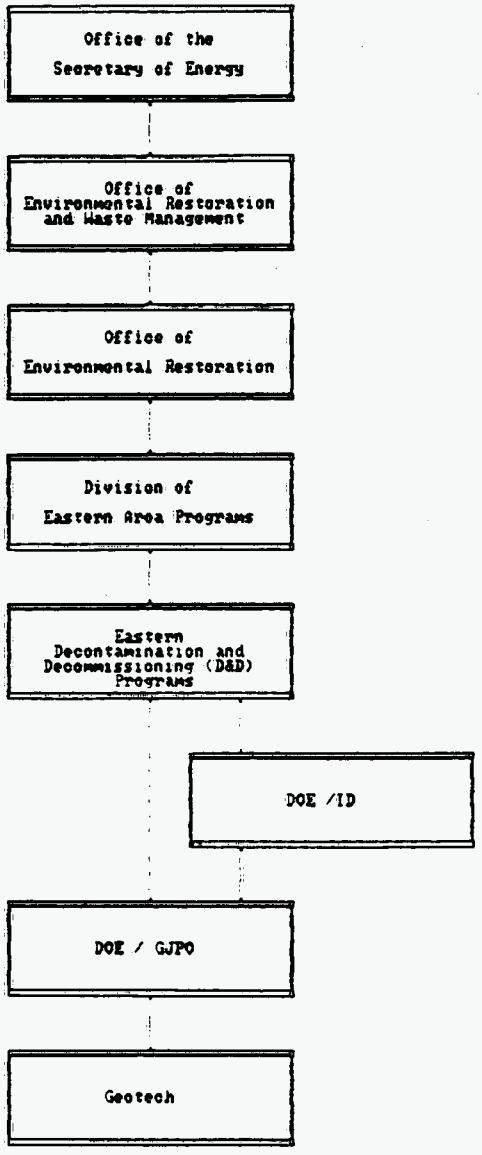


Figure 3.2-2. DOE Idaho Operations and Grand Junction Projects Office Organization

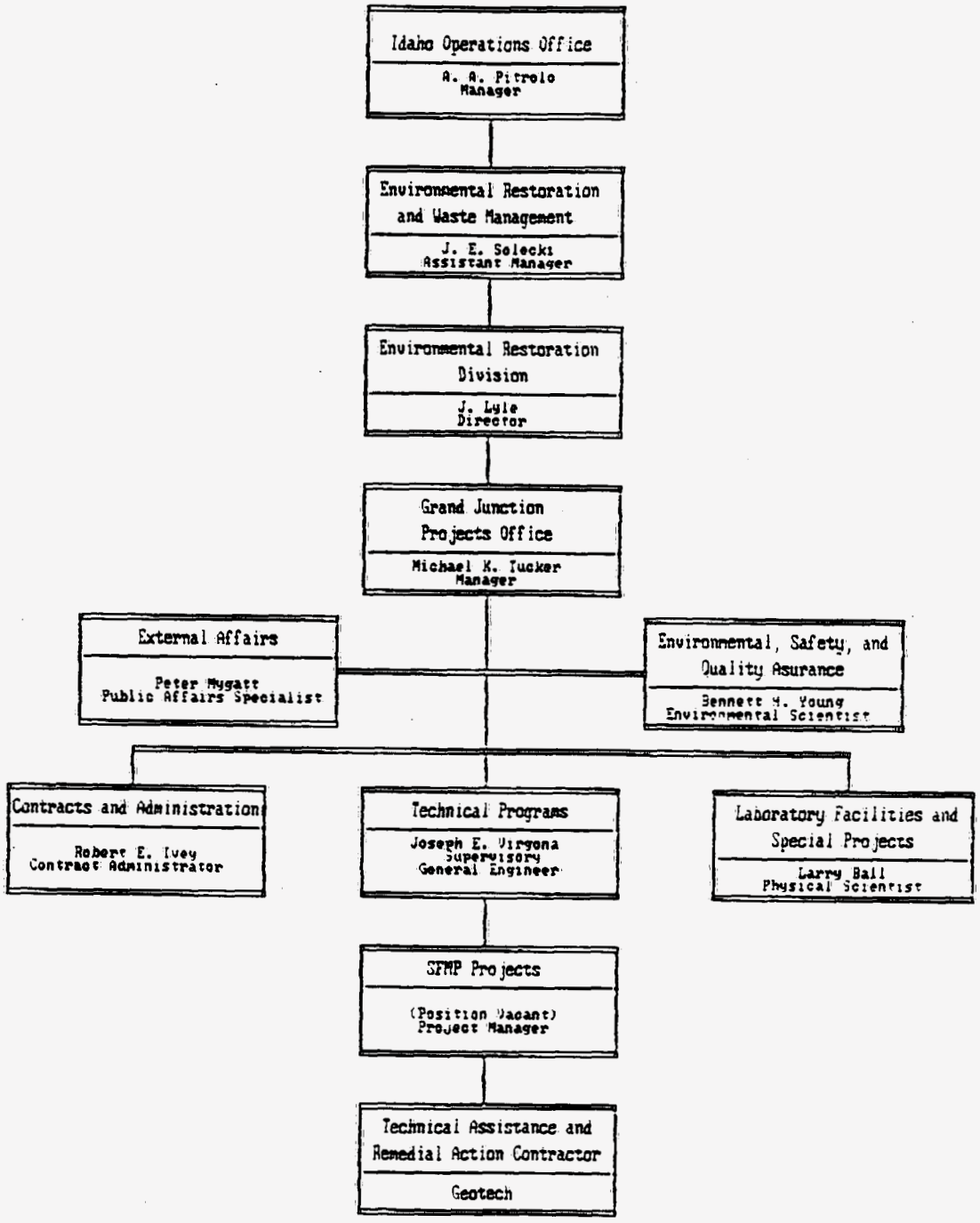


Figure 3.2-3. Geotech Organization

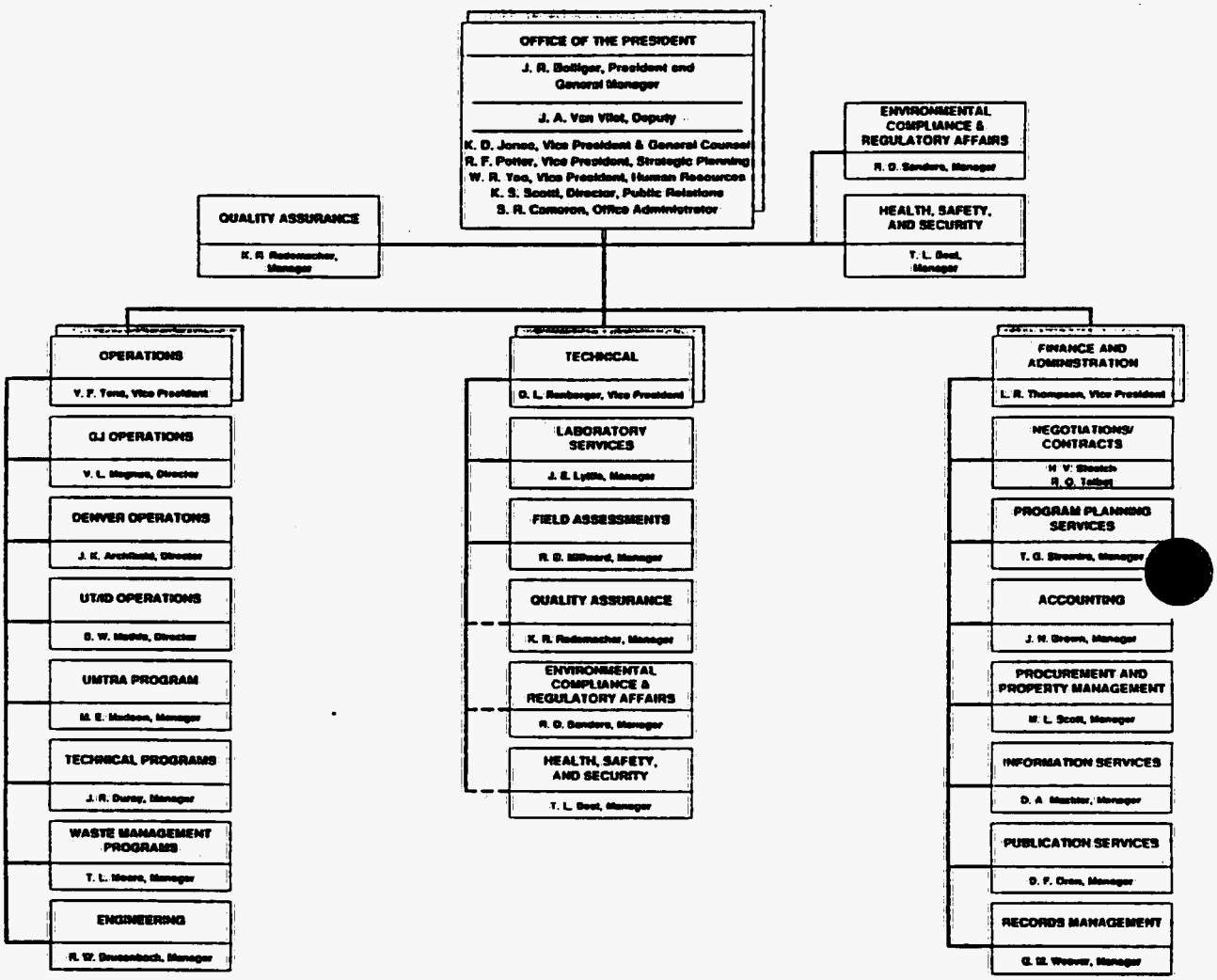
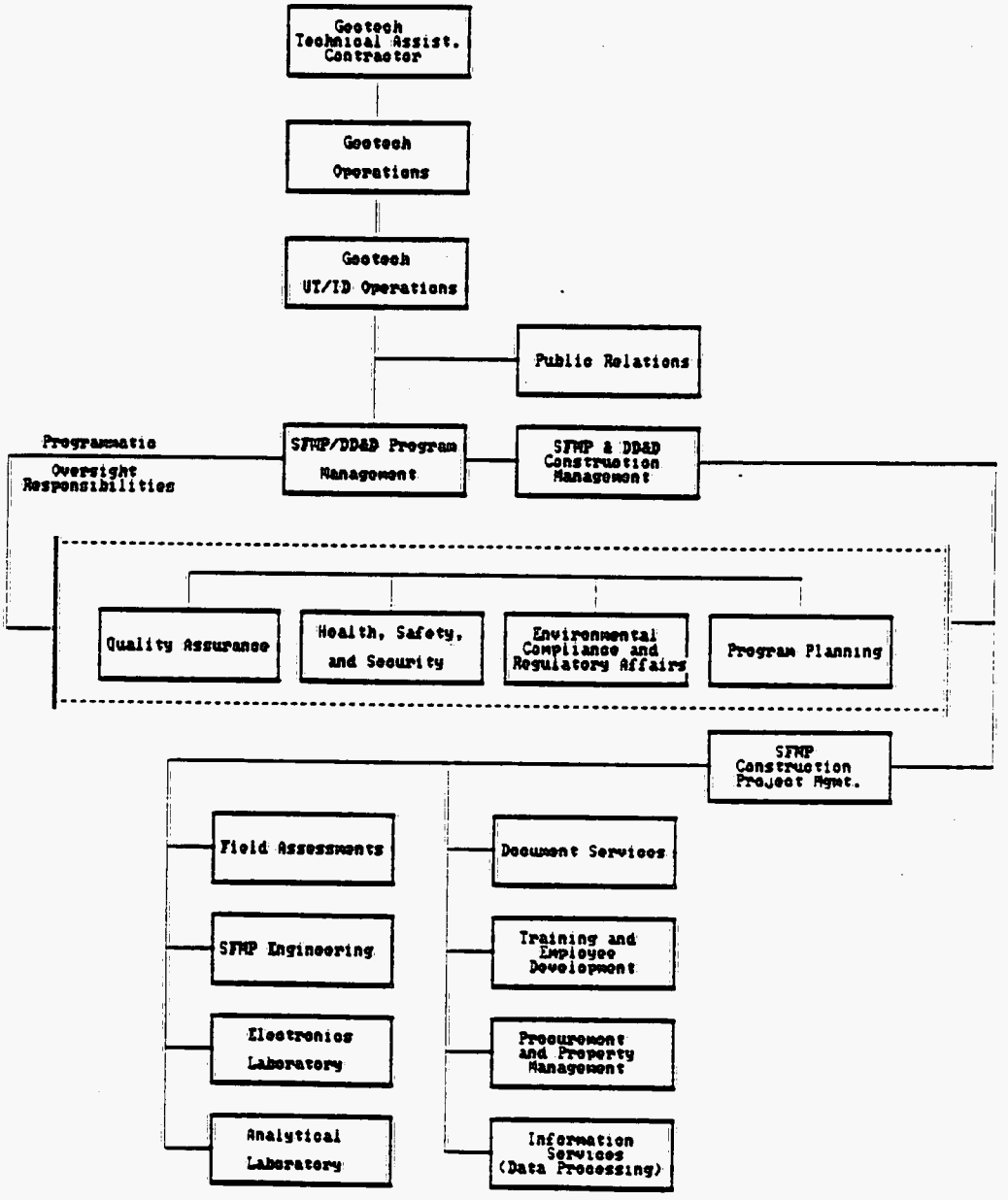


Figure 3.2-4. Geotech Matrixed SFMP MRAP Program Organization



Summary of Geotech Organizations and Responsibilities

UT/ID Operations (Brian Mathis, Director)
Responsible for assisting the DOE/GJPO SFMP Project Manager in the implementation of the project and execution of the scope of work.

SFMP/DD&D Program (Harry Perry, Manager)
Provides programmatic direction and control to Geotech organizations and interfaces with the DOE/GJPO SFMP Project Manager.

Public Relations (Karen Scotti, Director)
Develops the Monticello Mill Tailings Site Community Relations Plan, facilitates meetings with local authorities, issues informational updates to public media.

Planning and Control (Cheri Chance, Senior Specialist)
Assists in preparation of annual budgets and schedules. Prepares monthly financial reports and tracks actuals versus scheduled performance in accordance with the DOE-validated cost/schedule control system.

SFMP/DD&D Construction Management (Irwin Stewart, Acting Construction Manager; Dave Scheuerman, Project Manager)
Responsible for completion of the MRAP remedial design and remedial action with support from several Geotech functional organizations. Responsible for assuring implementation of company, project and compliance organization requirements.

SFMP Engineering (John Elmer, Manager; Brian Wilson, Senior Staff Engineer)
Prepares planning documents and design packages, including construction drawings and specifications in accordance with the MRAP Remedial Design Work Plan (P-GJPO-122) and MRAP design associated with peripheral property remedial action activities. Provides Engineering support during remedial action (e.g. review and periodic monitoring of remedial action for conformance with design documents).
Technical Programs (Jody Waugh, Principal Scientist)
Provides design input by conducting performance assessment modeling and field tests to demonstrate compliance of the repository design with regulatory standards. Provides technical support during remedial action.

Field Assessments (Dick Millward, Manager)
Technical Support (Dick Murri, Manager)
Assists in the resolution of radiological technical problems. Provides technical support for radon decay-product (RDC) measurements, opposed crystal system (OCS) measurements, instrument, data review, and utility location support. Responsible for developing and maintaining internal procedures and providing appropriate trainin
Field Services Subsection (Ken Ivie, Manager)
Provides Land Survey personnel to establish benchmarks and survey support as required throughout the project. Provides Field Services personnel to assess, monitor and control limits of excavation, and verify that radioactive contamination has been removed prior to reclamation of the contaminated areas. Provides Sampling and Analysis Plans and summary reports as directed by Work Plans.
Reports Subsection (Don White, Manager)
Responsible for data entry and compiling project completion reports.

Analytical Laboratory (Ron Chessmore, Manager)
Oversees in-house sample handling and analysis. Assigns qualified personnel project activities.

Summary of Geotech Organizations and Responsibilities (continued)

Training and Employee Development (Kalanda Morgan, Manager)
Maintains training records for Geotech personnel and information about employee training status. Assists with organizing training sessions to meet project needs.

Procurement and Property Management (Mel Scott, Manager)
Provides purchasing agents and subcontract administrators necessary to purchase the required tools and equipment and to procure the services of subcontractors required for the construction activities.

Quality Assurance (Farlie Pearl, QA Coordinator)
Provides program support in defining and verifying implementation of QA requirements. Develops and maintains project QAPP. Plans and conducts surveillances and participates in internal audits to verify compliance with plans and procedures.

Health, Safety, and Security (Travis Best, Manager)
Operational Health and Safety (Tom Richards, Manager; Syd Pincock, Supervisor)
Provides technical guidance to the Program Manager for the site specific Health and Safety Plan and implementation by field personnel. Provides project oversight and direct support to the Construction Project Manager. Initiates area and personnel monitoring for exposure controls.
Occupational Medical Program (M. Tim O'Malley, Manager)
Administers a comprehensive Occupational Medical Program including input into the H&S Plan, maintenance of employee occupational exposure records and facilitating employee physical examinations.

Environmental Compliance and Regulatory Affairs (Bob Sanders, Manager)
Compliance and Regulatory Affairs (Gary Neff, Manager; Deborah Richardson, Staff Scientist)
Identify pertinent local, state and federal regulations and ensure that project activities are conducted in compliance with these regulations. Develop and administer sampling related Work Plans and Specifications and responsible for issuing the final report.
Environmental Sciences (Mike Sewell, Manager)
Develops and implements environmental monitoring program.

Publication Services (Dave Oren, Manager)
Provides technical writing and editing, graphic arts, photography and centralized printing services as requested. Assigns document control numbers to program or project plans and operational procedures manuals.

Records Management (Gordon Weaver, Manager)
Develops the project Record Management Plan. Upon request, issues project plans and maintains distribution list. Provides tracking and archival of project documents.

Electronics Laboratory (Nat Key, Manager)
Establishes requirements for implementation of a company-wide system for "Calibration and Control of Measurement and Test Equipment and Reference Standards". Provides direct support through instrument calibration/maintenance and recall services.

Information Services (Belinda Arms, Supervisor)
Implements requirements of Manual 105, *Data Processing Manual*, for Computer software verification/validation and maintains the associated records.

QAI 2.1 QA Organizational Interfaces

Organizational Independence

Achieving quality standards is the responsibility of those who perform the work. The need for verification (internal systems and activities for quality control) by methods such as reviews, inspection, tests, etc. must be determined as appropriate to the work. Organizations must assign people who are independent of responsibility for performing the work to verify achievement of quality. The assignment of responsibility for verification must be documented.

The QA Coordinator will provide the necessary independent support to assist the Program Manager and organizations supporting the project in defining and implementing the QA Program. Support may include, but is not limited to the review of program planning, procurement and design documents and procedure reviews, and conducting surveillances to verify procedure compliance. The QA Section will support with independent internal audits to assure compliance with project requirements.

3.3 CRITERION 3, DESIGN CONTROL
(QAI 3.1 applies)

The Standard requirements of Criterion 3 apply to the Operable Unit I design and Operable Unit II decontamination and remedial action of peripheral properties, which shall be conducted in a manner consistent with the approved *DOE Record Of Decision* and in compliance with requirements of the *Federal Facility Agreement* (FFA). The *Remedial Design Work Plan* (P-GJPO-122) establishes the project baseline. Subsequent plans or other internal documents will be developed, as needed, in the appropriate level of detail required for the design inputs.

Design Processes

The design processes will be defined and documented to the level of detail necessary to permit it to be carried out according to the plans and specifications and to permit verification that the design meets the requirements. The design process shall include planning, establishment of design criteria, and change control.

Design planning shall establish, as required, the milestones at which design criteria, standards, specifications, drawings and other design documents will be prepared, reviewed, approved and issued.

Design criteria shall define, as required, the performance objectives, operating conditions, and requirements for safety, as well as requirements for materials, fabrication construction and testing.

Appropriate codes, standards and practices for materials, construction, testing and processes shall be defined in the design documentation. Where feasible, nationally recognized codes, standards and practices such as ASTM, ANSI, or ASME, should be used. When those are overly restrictive or fall short of defining requirements, they are to be modified, supplemented, or replaced by Geotech specifications.

Specifications, drawings and other design documents shall be prepared to define the design parameters. The specifications, drawings and other design documents will be prepared in conformance with standard formats for such documents.

Specifications, drawings and other design documents shall be reviewed and approved prior to issuance by persons other than those who designed the item. The reviews will determine that design interfaces are compatible, that the design meets all of its criteria, that it is complete, unambiguous, and readily producible, and that all parameters can be verified by inspection and/or test.

Design Verification

The extent of design verification within the Engineering Section is a function of the importance and complexity of the design, degree of standardization, likeness to similar or previous design and consequence of failure. Design verifications will be performed by technically competent individuals or groups other than those who performed the original design, but who may be from the same organization.

Design Verification (continued)

Acceptable methods of design review or verification include, but are not limited to, technical design reviews, alternate calculations, qualification testing or peer reviews. Design reviews must be documented.

Change Control

Changes to specifications, drawings and other design documents shall be promptly and properly documented, and shall be reviewed and approved by the same organizations that reviewed and approved the original issues.

Design changes, field changes (including, but not limited to structures, utilities, structural earthwork, or modifications to specifications), and modifications to design of a completed items (including engineered warranty work or Nonconformance Reports whose disposition was "Accept-As-Is" or "Repair") will be identified and justified by construction management. Redesign shall be performed by engineering and is subject to design controls equal to those applied to the original design.

Significant design changes shall be approved by the same functional organizations that reviewed and approved the original design.

When significant design changes are required due to an incorrect design, the design process and design verification procedures must be reviewed and modified as necessary.

Hand drafted or computer generated versions of maps or drawings produced in design activities (including field changes) must be controlled to ensure that current drawings are in use and have been checked, reviewed and approved for use.

Design Documentation

Design verification documentation must be presented in sufficient detail to allow technical personnel who are independent of the work to adequately evaluate and check design input requirements.

Design documents and records (i.e. those that provide evidence that the design and design verification process have been performed in accordance with this Criterion) will be collected, stored and maintained in accordance with documented instructions and procedures.

Design documentation shall include documents such as drawings, specifications, revisions and also supporting documentation that identifies the important steps of the design. Computer codes that support the final design and the source of design inputs must also be documented.

Computer Software Requirements

The standard requirements of Computer Software Requirements contained within Criterion 3, "Design Control", and Criterion 11, "Test Control", are applicable to user organizations who sponsor, develop, implement or use computer programs that perform data calculation operations that reduce or otherwise process data, model a physical process or system for design or other activities, or are used in tests to determine quantifiable results for MRAP. The *Data Processing Manual* (Manual 105) defines computer software design control and documentation requirements that are applicable to this project.

Organizations using software in design activities or to determine test results shall implement procedures for the application of the software to the work. The software applications procedures will provide controls for the use of the software in support of the work.

Products produced shall be generated with computer software and procedures sufficiently defined to allow repetition of the computations and the process by qualified third parties. Controls will include provisions for making record copies of all analyses and computations.

Applications software used in design activities or to determine test results will be tested prior to its use, to certify that it meets design specifications.

Computer programs may be used in the design process without verification for each application if the program has been shown to produce correct solutions within its defined limits and parameters, and to produce a valid solution to the type of physical problem.

Responsibilities

The Program Manager or his designee is responsible for determining the level of controls and testing for software used on the project and for assuring the documentation (verification and/or validation) of computer codes used in MRAP activities is maintained as part of the project record.

The Activity Manager is responsible for assuring that software has been appropriately verified and/or validated prior to its use. User organizations shall comply with the requirements of the Data Processing Manual (UNC-105) and obtain and provide documented evidence of software verification and/or validation, as appropriate. User organizations will maintain a list of computer codes that have been verified and/or validated for project use.

The Information Services Section shall provide Software Quality Control support to user organizations and maintain the documentation and record of verification and/or validation as directed by the Program Manager.

QAI 3.1 QA Review of Design Input and Output Documents

Design documents and their revisions and changes may be forwarded to the QA Coordinator for review when it is determined by the design group or other project organizations that a QA review would be beneficial. When requested, design output documents (such as specifications, drawings, design changes, or field design changes) shall be reviewed to ensure the following requirements, where appropriate, have been met:

- Acceptance criteria have been provided
- Inspection requirements and frequencies are defined
- Documentation requirements for the data to be recorded are included
- Internal reviews have been completed (including peer reviews and computer program verification)

QA review comments shall be recorded and provided, to the author of the document or requester of the review. Evidence of comment resolution or other disposition shall be maintained by the organization requesting the review until the material is revised, or superseded, has become obsolete or upon project completion.

3.4 CRITERION 4, PROCUREMENT DOCUMENT CONTROL
(QAI 4.1 applies)

Procurement documents shall be controlled to assure that design and other requirements, such as QA requirements, are included or identified for the procurement of items or services.

Purchase requisitions for subcontracted services for design, construction, drilling, calibration, fabrication, testing, studies, and data or sample collection and/or analysis should be submitted to the QA Coordinator for review to assure that quality requirements are passed on to the subcontractor. The QA review of procurement documents will be conducted according to QAI 4.1 and documented by signature on the requisition.

Changes to procurement documents require the same degree of control (review and approval) as that applied to the original documents.

Procurement activities are conducted in accordance with the requirements of the Geotech Procurement Manual and the Supply Property and Transportation Manual. User organizations are responsible for initiating procurement documents as described in the Geotech Guide for Preparing a Purchase Requisition (Form 90). Procurement documents must contain the following (at a minimum):

- Scope of Work
- Technical Requirements (reference to specific codes, standards, drawings, procedures, etc. to describe the services (or items) to be furnished and include identification of tests, inspections and acceptance requirements to be used in monitoring and evaluating the supplier's performance)
- Rights of Access to supplier and subtier supplier facilities and records
- Documentation Requirements or other Deliverables (identify the documentation that must be submitted, time of submittal, and whether it is for information or review and approval)

QAI 4.1 QA Review of Procurement Documents

Originators of procurement documents are responsible for ensuring that the documents comply with the requirements of the *Quality Assurance Manual* (Manual 101 and the *Procurement Manual*. Reviews of procurement documents should be performed by people who have access to information and an understanding of requirements. The reviewer must be identified and the date of the review must be shown.

At the completion of the QA review, comments will be forwarded to the originating organization for resolution. The concurrence of the originator will be obtained when adding QA requirements to procurement documents.

3.5 CRITERION 5, INSTRUCTIONS, PROCEDURES, AND DRAWINGS
(QAI 5.2 applies)

The work conducted for the project will be controlled by instructions, procedures and drawings to achieve the required quality. Organizations performing work are responsible for controlling the work by developing, issuing and complying with documented instructions and procedures, or controlling the work by other means consistent with QA requirements. Procedures, instructions and drawings must be prepared and approved before the start of work. The approval process must be documented.

The content of the procedure shall contain all information necessary for implementation of applicable administrative, technical and quality requirements and must address the following items as appropriate:

- Description of responsibilities and organizational interfaces
- The method and sequence by which an activity will be performed
- Provisions for the recording of data, where appropriate
- Identification of acceptance criteria (definitive for decision making)

When additional tasks require new procedures, the organization responsible for the work must provide the procedures prior to work. Procedures pertaining to sampling will be submitted to the Field Assessments Section Manager for possible inclusion in the *Environmental Procedures Catalog*, (Manual 116).

Implementing instructions and their revisions must have a documented review and resolution of comments by all affected organizations before they are issued. The originating organization will retain the record of the review and comment resolution until the material has been revised, superseded or discontinued for project use.

The Program Manager or his designee will direct the development, review, revision and approvals of project documents. Project documents will be reviewed by all affected organizations before they are approved and issued for the start of work. The author is responsible for documenting and assuring the satisfactory resolution or other disposition of review comments with reviewers. The "Record of Review" form shown by example in Figure 3.1-1, or an equivalent form or memo, may be used to document the review.

The Activity Manager, with administrative input from the Program Manager or his designee, is responsible for:

- Identifying and developing procedures and instructions that are needed
- Assuring the procedures and instructions adequately describe the work
- Assuring that personnel are trained in the use of the procedures and instructions
- Identifying records to be generated and information about the retention and disposition of the record
- Assuring procedures, instructions and drawings are reviewed and approved for project use prior to their implementation
- Assuring procedures, instructions and drawings are maintained current for project use

Personnel performing the work are responsible for complying with requirements of program plans and procedures and for identifying to the Activity Manager the need for additional procedures or revision to current plans and procedures.

Deviation from requirements identified in procedures and project plans must be documented, reported to the Activity Manager and evaluated by appropriate project administrative or technical personnel for the impact on the data or overall project administration.

QAI 5.2 Preparation of Instructions, Procedures, and Drawings

Responsibilities and General Information

Activities or part of an activity that impacts the success of a Company program or project is considered to be an activity affecting quality and is subject to control by instructions, procedures and drawings based upon management evaluation.

The Activity Manger is responsible for determining the need for project specific procedures, instructions and drawings and for assuring they are developed, reviewed, approved, issued, implemented and maintained correct and current for project use.

Individual organizations are responsible for establishing and documenting the format, identification, organization and approval of the instructions, procedures and drawings generated by them and for complying with applicable portions of Section 2, "Documentation Systems" of the Geotech *Management Policies Manual*, (Manual 100).

Specific Requirements for Instructions and Procedures

Descriptions of activities are to be written in a sequence with a level of detail commensurate with the importance of the activity. Forms or other data-recording requirements should be included in procedures.

Interfaces pertaining to document flows and responsibilities required for implementing the instruction or drawing should be identified or cited within the document.

When several documents are grouped together; e.g. procedures manual, specifications, drawings, a table of contents identifying the specific documents and revisions should be included.

Revisions should be easily identified by the user. Dating, along with margin indicators, bold print style, underlines, or other methods may be used. Where applicable, the Table of Contents to plans, procedures, specifications, drawings, etc. must also be updated to identify revisions.

3.6 CRITERION 6, DOCUMENT CONTROL

The preparation, issue, revision and change to project documents will be controlled to assure that current and correct documents are available for use by those performing the work. Such documents include but are not limited to project plans, procedures, instructions, drawings, specifications, design documents, and procurement documents.

Project documents, including changes, will be reviewed for adequacy, completeness and correctness before approval and issue. Reviews and comment resolution or other disposition will be documented. (Refer to Criterion 1 "Review" for general information on review documentation. The Record of Review form Fig. 3.1-1, or equivalent form or memo, must be used.)

Documents and procedures being developed or revised for project use will be marked to show the material is "draft" and as such not approved for project use.

Versions of project documents that have been discontinued or superseded will be marked as such or discarded by the holder of the document to prevent inadvertent use of out of date material. A record copy of such material will be maintained by the originator for the project file, unless directed otherwise by the MRAP Records Management Plan.

Changes to approved documents must be reviewed and approved by the same organizations that performed the original review and approval, unless other organizations have been specifically designated. Minor (editorial or typographical) changes that do not affect requirements of project documents may be made by the author of the document and submitted to the Activity Manager for examination prior to publication and distribution.

The Program Manager or his designee is responsible for:

- Assigning responsibility for preparation, review, approval, issue and control of program specific documents.
- Controlling distribution of project planning documents to assure that current and correct documents are available where the work is being performed.
- Assuring needed changes to project documents are made, that they are reviewed and that comments have been resolved or otherwise dispositioned by the author prior to approval of the document.
- Retaining the documentation (e.g., Record of Review) of the final draft review for the current version of the material and assuring that it is identified to the reviewer.
- Maintaining a distribution list for issuing project documents that identifies the recipient, date issued, document title and revision number and/or version date.

Activity Managers are responsible for controlling and maintaining Desk Procedures or other internal instructions. A distribution list should be maintained to identify manual holders, with the exception of those issued as "Informational Copy".

The maintenance, distribution and control of project drawings, specifications and Desktop Procedures Manuals are the responsibility of the originating organization.

Functional Organizations developing planning documents for project implementation will obtain and document the required reviews, comment resolution or other disposition and approval(s) for the document. Upon approval, the organization will submit a proposed distribution list to the Program Manager.

The Program Manager will provide Records Management an initial distribution list for the document. Records Management will issue and maintain the distribution list for for the following designated project documents:

- MRAP/MVP Project Plan (DOE/ID 12584-52)
- MRAP/MVP Project Management Plan (DOE/ID 15284-54)
- Remedial Design Work Plan (P-GJPO-122)
- Quality Assurance Program Plan (P-GJPO-123)
- Monticello Remedial Action Project Health and Safety Plan
- Community Relations Plan Update
- GJPO Environmental Protection Implementation Plan (P-GJPO-103)
- Records Management Plan for the Monticello Remedial Action Project (P-GJPO-121)
- Operational Procedures Manuals

3.7 CRITERION 7, CONTROL OF PURCHASED MATERIAL, EQUIPMENT AND SERVICES

The Standard requirements of Criterion 7 apply to the procurement of quality affecting services or items such as subcontracted Laboratory Services, A/E Design Services, and independent Testing and Inspection Services. Procurement planning will be accomplished in accordance with the requirements of the Geotech *Procurement Manual*.

The Activity Manager is responsible for the following procurement planning activities:

- Preparation, review and change control of the procurement documents
- Selection of prospective suppliers
- Evaluation of proposals or quotations and justification for the award
- Control of supplier performance
- Identification of verification activities by Geotech (including surveillances and inspections).
- Acceptance of items (e.g. analytical reports), services, or data
- Identification of records to be generated, the time of submittals, the location of the records, the retention time and disposition of the record.

Supplier Evaluation and Selection

The selection of suppliers will be based on their capability to provide services in accordance with the requirements of the procurement documents. Reviewers must document the process and criteria for evaluation and selection of suppliers.

The evaluation of a proposal or quotation shall determine the extent of compliance with the procurement documents. This evaluation must be performed by individuals who are designated, by the Activity Manager, to evaluate the following:

- Technical considerations related to the analytical service being procured
- QA requirements
- Capabilities of the supplier's personnel
- Production capability of the supplier to meet the analytical and reporting schedule
- Alternate or lower tier subcontractor capabilities

The Activity Manager is responsible for documenting the supplier evaluations including a summary memorandum justifying unacceptable as well as acceptable and recommended suppliers. This evaluation information will be forwarded to the Procurement Subcontract Administrator for award justification documentation.

Evaluation of Supplier Performance

The Activity Manager will establish with the supplier through the Geotech Procurement Subcontract Administrator the means and interfaces necessary to verify supplier performance. The measures may include:

- Establishing a documented understanding with the supplier concerning the provisions and requirements of the procurement documents (i.e. Submittals, schedules, resources, deliverables, etc.)
- Reviewing supplier generated or supplier processed documentation (data reports)
- Establishing a system for document exchange or transmittal between the supplier and Geotech
- Identifying changes and processing of information about changes
- Establishing the extent of inspections or surveillances based on the importance, complexity and quantity of the service.
- Reporting of noncompliance to contract requirements

When requested by the Activity Manager, or when need is determined, QA Surveillances of the supplier activities shall be performed and documented to verify conformance to the procurement documents. Documentation of supplier compliance resulting from review of documents and/or on site surveillances will at a minimum be provided to the Geotech Procurement Subcontract Administrator for inclusion in the subcontract file and to the Activity Manager requesting the surveillance. QA may retain informational copies of the review or surveillance documentation in the QA Supplier files.

Control of Supplier-generated Documents

Supplier-generated documents must be controlled, handled, and approved in accordance with established Procurement procedures. Evaluation of supplier-generated documents must be based on acceptance criteria that are contained in the procurement documents.

Procurement and the supplier must assure that measures to control changes in procurement documents are established, implemented and documented in accordance with Criterion 4, "Procurement Document Control".

Methods must be established in procurement documents for the acceptance of items furnished by a supplier.

Acceptance of Services Only

Acceptance of services, such as engineering or consulting services, that cannot be based on physical inspection or testing must be based on one or more of the following:

- Technical verification of the data produced
- Surveillance and/or audit of the activity
- Review of objective evidence for conformance to the requirements of the procurement documents (such as certifications or design reports)

3.8 CRITERION 8, IDENTIFICATION AND CONTROL OF ITEMS AND SAMPLES

The Standard requirements of Criterion 8 apply to the identification and control of site characterization and remedial action verification samples, samples associated with environmental and personnel monitoring, as well as construction test samples or materials acceptance. Personnel will assure that only correctly identified and traceable samples are utilized for the generation of data.

Where appropriate, Chain of Custody procedures will be implemented for samples associated with the site characterization, remedial action verification, and environmental and personnel monitoring.

Individual organizations involved in sampling, testing and materials acceptance are responsible for including specific control, identification, traceability and storage requirements in their instructions, procedures, drawings and other documents that control their work. Standard procedures maintained in the *Environmental Procedures Catalogue*, (Manual 116), will be used by Geotech field sampling personnel for identification, traceability and control of samples.

(**NOTE:** Refer to the *Supply, Property, And Transportation Manual* and contact the Operational Health and Safety Supervisor for additional safety and transportation requirements and considerations related to hazardous materials [i.e., posting, labeling, handling, shipping and storage, etc.])

Identification

The identification will provide traceability to sampling locations. Identification must be maintained either on or with the sample or in documents that can be traced to the sample. When samples are subdivided, identification markings will be transferred to the divided samples. Subdivided samples shall be assigned their identification, when possible before the physical separation, while maintaining their association with the original sample.

Traceability of Samples

Procedures shall include provisions to assure that samples are identified to allow traceability and clear association with the sampling location and activity. Procedures shall also include organizational responsibilities for maintaining traceability.

Storage of Samples

When applicable, procedures for sample preservation and storage shall be established and implemented and will include provisions for documenting the following:

- Receipt inspection for identification, damage, packaging and traceability to records
- Maintenance or replacement of identification consistent with the duration and conditions of storage and environmental exposure

Storage of Samples (continued)

- Controlled environments used, such as temperature, humidity, for samples that require them
- Inspection of packaging or repackaging of samples to protect them from physical or environmental damage during transport or storage
- Retention times of the samples and final disposition or disposal
- Record maintenance, updates throughout the storage period, and transmittal of records with the sample

Control of Samples

A system of sample and record transmittal receipt shall be established and implemented from the time the sample is obtained through final disposition or destruction of the sample.

When appropriate, field sampling and laboratory procedures will provide for the documentation of the preparation of reagents or their materials that will become an integral part of the sample (such as, filters, preservatives, or sealants).

Verification that the sample is correctly identified will be performed before sample is released for use or analysis.

3.9 CRITERION 9, CONTROL OF PROCESSES (Not Applicable)

The use of instructions, procedures and drawings as required in Criterion 5 and qualified personnel as required in Criterion 1 provide process control. At this time there are no Special Processes applicable to the MRAP Operable Unit I design activities or Operable Unit II (peripherial property) decontamination and remedial action activities.

3.10 CRITERION 10, INSPECTION
(QAI 10.1 applies)

The Standard requirements of Criterion 10 apply to remedial action construction inspection and reconstruction authorization; QA Surveillances; Health and Safety inspections; environmental monitoring and permit inspections; and conformance with Engineering design and specifications.

Organizations responsible for inspections that determine the acceptability of work or items, or surveillances that verify conformance will establish and implement procedures for control of the work or items.

Personnel performing surveillances or inspections to verify compliance with requirements will be independent of the work in that they do not report to supervisors who are responsible for the work or they are not responsible for directing or performing the work or activity under surveillance. Personnel who perform inspections for acceptance must be qualified for the assigned inspection tasks.

The QA Coordinator will conduct QA surveillances to verify compliance with requirements of project plans and procedures. The QA surveillances will be performed in accordance with QAI 10.1, "QA Surveillances". The qualifications of QA surveillance personnel will be verified by the QA Manager and will be documented in the training records maintained by Human Resources.

Routine remedial action inspection will be conducted by the Construction Management personnel assigned to the site. Inspections will document compliance with the requirements of the procurement documents. Inspections to verify conformance to design drawings and specifications will be documented as acceptance inspections. Inspection checklists may be used to assist in inspection planning and to document the inspection. Inspection will include, but is not limited to:

- o required submittals, including tests and materials,
- o conformance with the design drawings and specifications
- o pre-construction conditions, reconstruction authorization, final inspection
- o subcontractor performance
- o compliance with all applicable Health and Safety requirements

Inspection Planning

Inspections that verify and assure conformance to specified requirements shall be planned, performed, and documented in accordance with written instructions, procedures or checklists.

When direct inspection is not possible or is inadequate to verify conformance, plans must provide for systematic monitoring and surveillance to assure that the processes are controlled and the specified quality is achieved throughout the work.

Inspection planning will establish inspection hold and notification points, when appropriate, and will provide for the overall coordination and sequencing of inspection activities.

Inspection Planning (continued)

Inspection plans, instructions, procedures, or checklists must include the following:

- Required procedures, drawing or specifications
- Identification of activity or characteristics of item to be inspected
- Description of the method of inspection
- Measuring or test equipment or special tools required, including the requirements for accuracy
- Acceptance criteria
- Recording of inspection results
- Identification of inspectors who perform the inspection
- Date of the inspection
- Results or acceptability of the inspection, including follow-up and re-inspection for unacceptable items or activities

Notification and Hold Points

When appropriate, hold and notification points will be included in controlled documents such as schedules, procurement documents, and specifications. When mandatory hold or notification points are identified work must not proceed beyond those points without the consent of the organization that established the hold points.

Final Inspection

Completed activities will be inspected as required to verify conformance to specified requirements. Final inspection will include a review and examination of records for adequacy and completeness, if not previously examined. A review of all inspection records, the results, and resolution of unacceptable items or activities must be included. Final acceptance must be approved and documented by authorized personnel.

When sampling is used to determine the acceptability of a group of items or data, the sampling procedures must be based on recognized standard practices.

QAI 10.1 QA Surveillances

QA surveillances are intended to verify compliance of activities with QA or other requirements such as internal procedures, procurement documents, etc.

QA surveillances will be planned and affected organizations will be notified in advance to confirm the actual schedule and scope of the planned surveillance. The performance and reporting of the surveillance will be in accordance with QA Desk Instructions and Administrative Procedures.

QA surveillance personnel will announce their presence to appropriate supervisory personnel. QA surveillance personnel will have access to records and activities and will be provided the necessary assistance to complete the surveillance investigation.

3.11 CRITERION 11, TEST CONTROL

This criterion applies to the equipment standardizations, operating checks, or other comparisons that are part of the operations, start-up or test procedures for the collection and analysis of data associated with characterization and verification samples, environmental and personnel monitoring samples, as well as testing to verify design requirements and quality of materials and services. In addition to the Standard requirements, Software Verification Testing and Software Validation Testing sections of "Computer Software Requirements" identified within Criterion 3, "Design Control" is applicable when computer programs have been used in the test to determine results.

Field control of measuring and test equipment is accomplished by performing operational checks and/or standardizing instruments in the field as detailed in procedures of the User Organization. Documentation of operational checks and/or standardizations is to be recorded on the appropriate data form or field notebook.

Test Controls must address any of the following that apply:

- Procedures or plans must establish test requirements and acceptance criteria and must be provided or approved by the organization responsible for the test.
- Test procedures must include or refer to test objectives, prerequisites, instrumentation required and environmental conditions that must be maintained.
- Test control elements must include calibrated or standardized instrumentation, equipment, procedures, trained personnel, sample/test equipment condition, and environmental conditions, provisions for data acquisition and recording.
- Data quality and/or test results must be documented and evaluated to assure that analytical and/or test requirements have been met.
- When computer programs have been used in the test to determine results, the evaluation of results must include software verification as described in Criterion 3, "Design Control".
- Test records that include information and data on specific items and activities must be maintained by or for the project.

In lieu of specially prepared written test procedures, appropriate sections of related documents and standards, such as ASTM methods, supplier manuals, or approved drawings may be used, provided that added instructions are included to assure the required quality of work.

When appropriate, analytical requirements and acceptance criteria such as precision and reporting limits will be identified in a Sampling and Analysis plan and will be based on specific requirements contained in pertinent technical documents. Organizations developing site specific Sampling and Analysis Plans will assure the plans are routed to the Geotech Manager of the Analytical Laboratory for review prior to initiating sampling activities.

The Geotech Manager of the Analytical Laboratory is responsible for assuring the Geotech laboratory personnel performing the analysis have been adequately trained and that the training has been documented. Requirements for personnel qualifications for subcontracted service providers shall be identified in the procurement documents and may be subject to supplier pre-qualification or performance audit.

Test Reports

Test reports must include the following at a minimum:

- Identification of the items, samples or specimens tested
- Identification of the individual performing the test; or the serial number or ID number of the data recorder
- Date of the test
- Type of observation
- Test results and acceptability
- Deviations noted during the test and actions taken in connection with them
- Individual evaluating the results

3.12 CRITERION 12, CONTROL OF MEASURING AND TEST EQUIPMENT

Instruments used to collect data will be controlled to maintain accuracy. The Standard requirements of Criterion 12 apply to the Measuring and Test Equipment (M&TE) used for gathering field data, such as site characterization, remedial action, and personnel and environmental monitoring; for conducting specified materials testing for design conformance; and for analyzing samples.

The *Calibration and Control Program for Measurement and Test Equipment and Measurement Standards* (Manual 113) addresses control, calibration, classification, labeling and recordkeeping for measuring and test equipment. User organizations will participate in the Calibration and Control Program as detailed in Manual 113 or will develop and implement procedures to meet the standard requirements of Criterion 12 as described in the *Quality Assurance Manual* (Manual 101).

3.13 CRITERION 13, HANDLING, SHIPPING, AND STORAGE

When applicable, user organizations must establish procedures appropriate to their work for shipping, handling and storing items (test specimens and samples, materials, equipment, components, and designated waste materials) to preclude deterioration or damage to the item or environment.

(**NOTE:** Refer to the *Supply, Property, And Transportation Manual* and contact the Operational Health and Safety Supervisor for additional safety and transportation requirements and considerations related to hazardous materials [i.e., posting, labeling, handling, shipping and storage, etc.])

Cleaning, handling, preservation, packaging, shipping and storage of sensitive, critical or perishable samples or items will be controlled by use of procedures. When multiple organizations are involved, procedures or instructions should describe the interface or custody responsibilities.

The User Organization is responsible for establishing instructions for marking, labeling, packaging, shipping, and storing items or samples as necessary. Standard procedures maintained in the *Environmental Procedures Catalogue* (Manual 116) may be applied when appropriate.

The Field Team Leader is responsible for assuring equipment, instruments and/or samples will be handled, packaged, preserved, shipped and/or stored (prior to analysis) to prevent damage, loss, or deterioration from environmental conditions.

The Laboratory is responsible for maintaining the sample until analysis has been completed and the final disposition has been carried out. Sample disposition is identified to the Geotech Analytical Laboratory through completion of the Request for Analytical Services form, (UNC-1500). The disposition of samples that are shipped to a subcontract laboratory will be identified in the procurement documents.

3.14 CRITERION 14, INSPECTION AND TEST STATUS (Not Applicable)

Inspection and test status requirements of Criterion 14 do not apply to the design, decontamination and remedial action activities of the MRAP Project. The Geotech Quality Assurance program applies requirements for identification of the inspection and test statusing to "Q" Level project activities for the manufacture, installation, testing and operation of items.

3.15 CRITERION 15, CONTROL OF NONCONFORMANCES
(QAI 15.1 applies)

A system for control of nonconformances is established for the control of items or activities that do not conform to written requirements. This system applies to items, data, and activities that affect the quality of the work performed. The controls will provide for identification, documentation, evaluation, segregation (when practical), and dispositioning of nonconforming items, and notification to organizations that might be affected.

Nonconformance reports may be initiated by any personnel identifying a nonconformance, and are administered and tracked by the QA Coordinator. A decision will be made by the Activity Manager with assistance from the QA Coordinator as to whether or not the condition is a nonconformance. The QA Coordinator will copy the Program Manager on all nonconformances affecting the project, so that a determination of impact on the project can be made.

Geotech organizations performing project work will use the nonconformance system as defined in QAI 15.1, "Nonconformance Reporting, Disposition and Closure", for reporting nonconforming items, data, or activities that have been delivered, transported to, or that may impact other organizations.

Reporting

Nonconforming items or data that have been delivered or transmitted to other organizations must be reported and evaluated. Nonconforming items or data that have not gone beyond the organization must be documented and evaluated internally, but formal reporting as described in QAI 15.1, is not required.

For activities in progress within an organization, any items or conditions that do not comply with project requirements must be reported and evaluated within the organization. Managers of activities are responsible for evaluating the consequences of nonconformances and formally reporting nonconformances that have significant adverse effects on quality of the work performed outside their organization.

Nonconforming activities (such as actions that do not comply with written procedures) or data must be identified to prevent further use, and included in the Nonconformance Report.

Identification and Segregation of Items

Nonconforming items will be identified and marked, tagged and/or removed to a designated holding area to prevent their inadvertent use, show the acceptability status of the item and will not adversely affect the end use of the item. Prompt notification of the nonconforming items must be provided to organizations that are affected.

Nonconforming items must be segregated whenever practical, in a clearly identified holding area, where they will be kept until the disposition of the item is determined. Where physical segregation is impossible or impractical, other administrative steps may be taken to prevent inadvertent use of nonconforming items.

Figure 3.15-1. Nonconformance Report (Side 1)

UNC Geotech

Nonconformance Report

13. NCR No.:

Page 1 of ____

1. Purchase Order Number:	2. Title or Subject	3. Document No., Title, or Revision
4. Project, Program, or Activity	5. Supplier Name/Address	6. Job No. or ID No.

7. Item	8. Description of Nonconformance

14. Disposition/Justification Instructions

9. Probable Cause of Condition

10. Recommended Action to Correct

11. Originator's Signature or Name — Date

12. QA Coordinator Signature — Date

15. Design Document Change Required?	16. Reportable As an Event?	17. Corrective Action Required?
☐ Yes (Document No. _____) ☐ No	☐ Yes (Report No. _____) ☐ No	☐ Yes (specify _____) ☐ Yes (CAR No. _____) ☐ No

Approvals			
18. Technical Representative — Date	Signature — Date	Signature — Date
QA Coordinator — Date	Signature — Date	Signature — Date

Close Out

19. ☐ Disposition Completed As Directed

☐ Other (Specify): _____

Originator or QA Coordinator

Distribution

20. Action — Information Copies

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Figure 3.15-1. Nonconformance Report (Side 2)

(continuation sheet)

Instructions for Completion of Nonconformance Report

A Nonconformance Report can be issued by anyone. The individual (originator) identifying the nonconforming condition will enter, or provide to have entered, the following information to complete the portion of the Nonconformance Report within the heavy border (items 1 through 11).

1. The Purchase Order Number or Contract Number of the affected item or service, if applicable.
2. A brief descriptive title or name of the affected item or activity.
3. The requirements document number, title, etc., and revision.
4. The project, program, or activity affected by or responsible for the item or activity.
5. The supplier or subcontractor name and address (when applicable).
6. A unique identification number for items, or the job number or other reference for activities.
7. Item (line) number of the condition when more than one affects a specific item or activity.
8. Description of the nonconformance condition in a "Required" and "Is" format (for an example see the UNC Geotech Quality Assurance Manual (UNC Manual-101), QAI 15.1, page 15.1-2).
9. When available, enter the most probable cause of the nonconforming condition.
10. When appropriate, enter the originator's recommendation of actions to correct the specific and related conditions.
11. The originator's signature (or printed name when prepared by the QA Coordinator) and the date.

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QAI 15.1 Nonconformance Reporting, Disposition, and Closure

QAI 15.1 is implemented for the MRAP Project to provide a standard method to report a nonconformance and provide a record of the action taken to deal with the nonconforming condition. This procedure may be used internally for documenting supplier nonconformance to requirements of the Statement of Work, which would be supplemented by actions of the Subcontract Administrator per standard Procurement practices.

The details for administration of QAI 15.1 are provided in the *Quality Assurance Manual* (Manual 101). Personnel identifying nonconformances should follow their organization's internal system for review. If the condition is judged to be reportable, a Nonconformance Report (NCR), form UNC 1594, (Figure 3.15-1) will be initiated and transmitted to the QA Coordinator, or the QA Coordinator may be asked to prepare the NCR. Once the NCR has been initiated the QA Coordinator is responsible for assigning the NCR a control number, dispositioning the NCR in cooperation with technical representative(s), and subsequent verification of the completed corrective action.

3.16 CRITERION 16, CORRECTIVE ACTION

QAI 16.1 applies

Conditions adverse to quality will be identified by the QA Manager through the use of QAI 16.1, "Corrective Action Request System". The system is to be used when other methods of obtaining corrective action have failed or have been ineffective. QAI 16.1 provides for identification of conditions adverse to quality, the determination of the cause of the conditions, and obtaining corrective action. Managers of activities which are issued Corrective Action Requests are responsible for evaluating the conditions, determining the cause, proposing a solution, and completing corrective action.

QAI 16.1 Corrective Action Request System

A Corrective Action Request (CAR) may be issued by the QA Manager when significant quality problems exist that have not been effectively addressed by other mechanisms. CARs will be written and issued in accordance with the instructions provided in QAI 16.1 and with QA Desk Instructions and Administrative Procedures. Managers receiving a CAR are responsible for timely and effective corrective action.

3.17 CRITERION 17, RECORDS

The Standard requirements of Criterion 17 apply to administrative and technical records that demonstrate the achievement of quality. Records must be legible, identifiable, and retrievable. Records are to be protected against damage, deterioration, or loss.

The *Management Policies Manual* (Manual 100), Section 13, "Records Management", establishes Company-wide responsibilities for records planning, generation, classification, indexes, protection, storage and disposition. The MRAP Records Management Plan (P-GJPO-121) defines and implements these requirement for the project; identifies any additional requirements for record transmittal, distribution, retention, maintenance and disposition, and as appropriate identifies document control and records management procedures to be applied to this project.

3.18 CRITERION 18, AUDITS
(QAI 18.1 applies)

Audits of the project and supporting organizations will be conducted by the QA Section according to QAI 18.1, "Performance and Reporting of Audits". The audits will be conducted by qualified auditors including Lead Auditors certified by QAI 1.9, "Certification of Personnel". QAI 18.1 addresses scheduling, planning, personnel qualifications, performance and records.

Internal audits will be conducted by certified Lead Auditors. The Lead Auditor will be independent of the project. Project needs will be evaluated during the annual audit planning process. Audits will be scheduled with consideration given to audits performed on subcontractors, Geotech support organizations, and the need for a project audit. Internal surveillances and site visits will be scheduled periodically to verify compliance with approved plans and procedures.

Planned and scheduled audits of the MRAP Project and supporting organizations will be performed to verify compliance with the QA Program. The audit is intended to verify that the QA requirements have been adequately addressed in plans, manuals, procedures or instructions and implemented by organizations doing the work.

QAI 18.1 Performance and Reporting of Audits

The QA Manager is responsible for the overall scheduling and planning of audits. Scheduling shall include the assignment of a Lead Auditor from the QA Section who is independent of the project or activity.

The Lead Auditor will conduct the audit in accordance with *QA Section Desk Instructions and Administrative Procedures* for planning, performing, administering and reporting audits.

ATTACHMENT A

GLOSSARY OF TERMS

The following glossary defines words or terms used in association with quality assurance activities. National codes and consensus standards governing activities related to quality assurance may contain some definitions that are more specific to particular activities than the general definitions stated below.

Acceptance - The result of (1) evaluating an item, process, or service on the basis of design or other specified criteria, and (2) finding that it meets or exceeds the requirements.

Acceptance Criteria - Specified limits, requirements, or tolerances placed on the variation permitted in the characteristics of an item, process, or service as defined in codes, standards, drawings, specifications, procurement documents, or other requirements documents. The criteria may be expressed in engineering terms; however, acceptance criteria may also apply to services, reports, or data. The criteria must be definitive for decision making purposes, but might not be related to instruments or measurements.

Analysis (chemical) - A process of acquiring information about the chemical composition of a substance.

As-built - Documented information that describes the construction or fabricated condition actually achieved.

Assessment (Appraisal) - A formally documented evaluation of the effectiveness of and compliance with the intent of an order, code, standard, or management system. The basis of evaluation may also include opinion pertaining to what a reasonable person would expect.

Audit - A planned and documented activity performed to determine by investigation, examination, or evaluation of objective evidence the adequacy of and compliance with established instructions, procedures, drawings, or other applicable documents, and the effectiveness of implementation of requirements. An audit should not be confused with surveillances or inspections, which are performed to evaluate process control or product acceptance.

Auditor - An assigned individual who performs any part of an audit; Lead Auditors and auditors-in-training are included. Technical specialists and others such as management representatives are considered observers.

Calibration - Comparison of measurement equipment with reference standards of greater accuracy to detect, quantify, report, and eliminate inaccuracies. Calibration may include adjustment or alignment, depending on the as-found condition of the equipment.

Certification - The act of determining and verifying qualification of personnel, processes, procedures, or items in accordance with specified requirements, and attesting to those qualifications.

Computer Program - A sequence of instructions suitable for processing by a computer. Processing may include the use of an assimilator, a compiler, an interpreter, or a translator to prepare the program for execution as well as to execute it. Computer programs included are those used for design analysis, process or test control, or databases used as controlled sources of information for the above.

Controls - Documented administrative rules, orders, instructions, procedures, policies, practices, and designations of authority and responsibility.

Corrective Action - Measures taken to remedy conditions adverse to quality, and where necessary, to prevent recurrence.

Corrective Action Request (CAR) - A document used to identify significant conditions adverse to quality, identify corrective action, and record verification of corrective action taken.

Criterion - When used in the QA Program as a capitalized term, a statement of the application of one of the 18 Basic Requirements of NQA-1 to the kind of work performed or directed by Geotech.

Design - The solution to a technical problem, or the result of deliberate planning, analysis, mathematical manipulations, and design processes.

Design Analysis - Evaluation of the design methods, calculations, techniques, parts, or equipment that are essential for satisfying the overall design to determine whether the design is suitable for the intended application.

Design Bases - Design input information that identifies specific functions to be performed and that defines the limits within which the functions will operate.

Design Documents - Materials such as procedures, drawings, design analyses, design criteria, design inputs, computer programs, specifications, and system descriptions. Design documents are used in preparing a design and as products of the design.

Design Information - Data that are generated or used in design activities. Design information includes test results, experimental data, data from other sources, and computer codes.

Design Input - Criteria, information, parameters, bases, or other design requirements upon which detailed final design is based. See Design Bases.

Design Output - Drawings, specifications, computer programs, or other documents that define the technical requirements developed by the design process.

Design Process - Technical and management process that begins with the identification of design input and that results in the issue of design output documents.

Design Verification - Determination that the final design is correct and satisfactory.

Deviation - A departure from specified requirements or procedures. (see nonconformance.

Document - Any written or pictorial information describing, defining, specifying, reporting, or certifying activities, requirements, procedures, or results. A document is not considered to be a record until it includes actual data, results, or information, and is authenticated.

Document Control - The act of assuring that documents are reviewed for adequacy, approved by authorized personnel for release, and distributed to and used at locations where the activity is performed. Document control includes assuring that changes to the documents receive the same control measures as the originals.

Guideline - A suggested practice that is not mandatory in programs intended to comply with a standard. The word should denotes a guideline, and the word shall or must a requirement.

Hold Point - A point at which the performance of an activity must stop until specified actions are completed.

Implementation - The act of providing a means for identifying requirements and putting them into effect.

Implementing Instructions - Procedures, guides, or practices.

Indoctrination And Training (QA) - All actions necessary to assure that personnel are properly trained to manage or perform activities that affect quality, such as classroom sessions, on-the-job training, or required reading. Employees must be familiar with and understand the purpose, scope, and implementation of the QA Program as it applies to their work.

Inspection - Examination or measurement to determine whether items such as material, components, modules, parts, assemblies, subassemblies, units, equipment, systems, and structures resulting from construction or manufacturing processes conform to specified requirements. (Note: Activities are verified, not inspected.)

Interface Control (Organizational) - Assurance that current and correct information is transmitted from one organization to another.

Item - An all-inclusive term used in place of any of the following: assembly, component, equipment, material, module, part, structure, subassembly, system, or unit. The term may also include technical data, documents, computer codes, samples, or other work to specified criteria.

Lead Auditor - An individual who is formally qualified to organize and direct and audit, report audit findings, and evaluate corrective action.

Measuring and Test Equipment (M&TE) - Devices or systems used for calibrating, measuring, gauging, testing, or inspecting to control, to acquire data, or to verify conformance to specified requirements. M&TE includes devices or systems used to acquire research, development, or test data; or to determine compliance with design, specifications, or other technical requirements. Systems used for measurement or testing include components from the sensing element through the output or recording device.

Modification - A limited change in material or design configuration or in the substance of documents.

Monitor - An overview of a process or activity to evaluate compliance with specified requirements, or to gather information. Monitoring need not be planned or documented, and does not take the place of surveillances or inspections. See Inspection and Surveillance.

Nonconformance - A deficiency in a characteristic, procedure, or documentation that renders the quality of an item unacceptable or indeterminate. Examples of nonconformances include, but are not limited to, physical defects, test failures, incorrect or inadequate documentation; or deviations from prescribed processing, inspection, or test procedures, or from other technical requirements documents.

Nonconformance Report (NCR) - The document used to report the identification and disposition of nonconformances.

NQA-1 - An abbreviated designation of ANSI/ASME NQA-1, Quality Assurance Program Requirements for Nuclear Facilities, with revisions, which is accepted by the Department of Energy as a statement of Quality Assurance requirements for nuclear facilities, and by extension, for activities of DOE contractors in other areas.

Objective Evidence - Any verifiable information pertaining to the quality of an item or activity.

Procedure - A document that specifies or describes the way an activity is to be performed.

Process - The sequence or steps that must be accomplished to complete an item or activity to requirements.

Process Control - The system for assuring that required process steps are completed in sequence and accepted through completion. Typically, Hold points, inspections, or tests are identified, along with documentation or data to be recorded.

Procurement Documents - Purchase requisitions, purchase orders, drawings, subcontracts, specifications, or instructions formally approved and used to perform the procurement process. These documents also define the requirements that must be met before items or services may be accepted by Geotech.

Program Plan - A written description of the activities required for achieving the goals or objectives of a program. The plan describes the strategy to be followed and the major actions to be taken to achieve those objectives. The plan addresses program-related elements, including program interfaces, schedule, major milestones, budget, technical control, quality assurance, and program control.

Quality Assurance (QA) - All planned and systematic actions necessary to provide adequate confidence that a facility, structure, system, or component will perform satisfactorily in service. The goal of QA is to ensure (1) that research, development, demonstration, and production activities are performed in a controlled manner; (2) that components, systems, and processes are designed, developed, constructed, tested, operated, maintained, and decommissioned according to sound engineering standards, quality practices, and technical specifications; and (3) that the resulting technical data are valid and retrievable. QA includes quality control.

Quality Assurance Coordinator - A member of the QA staff assigned to provide QA assistance to the management of activities and programs in Quality Assurance matters. The QA Coordinator assists in establishing the QA Program and evaluating compliance with it. Coordinators develop QA Plans, perform QA reviews and surveillances, participate in audits, and take other actions to verify compliance with QA requirements.

Quality Assurance Program - The system of activities associated with defining, implementing, and verifying compliance with the requirements for quality assurance. The program is described in the Quality Assurance Manual.

Quality Assurance Program Plan (QAPP) - A document identifying the requirements that the Program or Activity Manager and the QA Coordinator have judiciously selected from the overall QA Program, along with customer's QA requirements that are to be imposed on a particular program. The QAPP provides an index or a description of the procedures that implement these QA requirements and any other supplementary requirements. The QAPP also includes specific responsibilities and authorities for implementing the requirements it contains.

Quality Assurance Requirement - A requirement applied to items, activities, or services to assure that specified quality requirements are satisfied.

Quality Control - Those quality actions necessary to control and verify the features and characteristics of an item, material, process, facility, or service to specified requirements.

Quality Requirements - The attributes and characteristics that define the quality of items, products, or services. Quality requirements are established by the design organization during the design process and are included in design output documents (such as specifications or drawings) as technical requirements.

Record (Quality Assurance) - A document that furnishes evidence of the quality of items or activities and that has been verified and authenticated as technically complete and correct. Records may include photographs, drawings, magnetic tape, and other data-recording media.

Reference Standards - Physical standards (primary, secondary, consensus, and working standards where appropriate) used in calibration. These standards establish the basic limits of accuracy for calibration and provide traceability.

Software - All-inclusive term for the codes and programs used to direct a computer in the manipulation or calculation of data or in other problem-solving.

Special Process - A process in which the specified quality cannot be readily determined by inspection or test of the product and the results of which are highly dependent on the control of the process and/or the skill of the operators.

Specification - A set of requirements to be satisfied by a product, material, or process. When appropriate, the specification should include the procedure for determining whether the requirements are satisfied.

Standard - The result of a particular standardization effort approved by a recognized authority (such as ASTM, ANSI, or IEEE); or a substance used as a reference material in chemical analysis.

Stop Work - To discontinue all or any of the activities related to the fulfillment of contract obligations.

Supplier - A generic term for any individual or organization who furnishes items or services in accordance with a procurement document; or an all-inclusive term used in place of any of the following: vendor, seller, contractor, subcontractor, fabricator, consultant, and their subtier levels.

Surveillance - The act of monitoring or observing to determine whether an item or activity conforms to specified requirements.

Survey - An activity to evaluate an organization's capability, including its quality program, to meet the requirements specified in a request for proposal or a subcontract. Examples are a survey made before award of a subcontract, or acceptance of a QA plan, test plan, or other critical planning activities.

Test - To subject an item to (1) a set of physical, chemical, environmental, or operating conditions as one means of verifying and determining the capability of the item to meet specified requirements; or (2) physical or chemical measurements or operations performed for acquisition of data, not intended to evaluate conformance to a requirement. A test encompasses all elements of an analysis, as well as a comparison of the results with the acceptance criteria. Evaluation of results may be performed either within or outside the organization performing the analysis.

Test Equipment - Specialized equipment used during testing, analysis, inspection, or data-gathering that does not itself provide a reading or result, but that could affect the results if not in compliance with specified dimensions, weight, or other characteristics. Test equipment, such as chemical analytical equipment, is frequently only verified or standardized, rather than being calibrated.

Tolerance - The allowable deviation from a specified or true value.

Traceability - The capacity for tracing the history, application, or location of an item or sample by means of documentation or physical identification.

Traceability (in calibration) - The ability to relate individual measurement results through an unbroken chain of calibrations to one or more of the following: (1) reference standards maintained by the National Institute of Standards and Technology (NIST), (2) fundamental or physical constants, (3) national standards of other countries, (4) ratio-type calibrations, or (5) consensus standards.

Validate - To review, inspect, test, check, compare, or otherwise determine that the result satisfies the original intent. For example, a component or piece of equipment must provide the function, performance, and reliability; a computer program must accurately solve the problem; and originally posed data and field data must accurately reflect existing conditions.

Verification - To determine by review, test, audit, surveillance, checks, or other means whether an activity, process, service, document, or computer program conforms to specified requirements.